A Study on Online Purchase Motivation, Perceived Risk and Behavioral Intention of Sports Goods Consumption

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Author’s contribution

This work was carried out in collaboration between both authors. Author CHY designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author CFC guides the writing and revise of manuscript. Both authors read and approved the final manuscript.

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ABSTRACT

The purpose of this study is to analyze the characteristics of consumer behavior, and the relationship among purchase motivation, perceived risk, and behavioral intention. In this study, 594 valid questionnaires were collected from consumers who bought sports goods online. After statistical analysis, this study found that: 1. Sports shoes are the main products consumers buy online. 2. There is no difference in purchase motivation, perceived risk, and behavioral intention between genders. 3. Consumers of different ages have different purchase motives and perceived risks. 4. Consumer purchase motivation and perceived risk have predictive effect on behavioral intention.

Keywords: Online shopping; sport goods; purchase motivation; perceived risk; and behavioral intention.
1. INTRODUCTION

Because of the rise of the Internet, it provides a new trading channel choice for enterprises and consumers. As a result, e-commerce has begun to develop, rapidly changing consumer habits. Consumer choice is no longer limited to general physical stores. E-commerce is a digital economy based on the Internet, which has become one of the shopping characteristics of modern people. E-commerce also brings impact and turnover for enterprises. With the increase of Internet users and the increase of online shopping business opportunities, it is normal to set up websites or use online shopping platforms to expand market access, among which parity products are still the mainstream. Therefore, the advantages and features of online marketing are that the types of goods that can be sold are far greater than the types and patterns that can be sold by physical goods [1]. Different from the physical shopping mode, online shopping consumers can only browse sports goods through the computer screen, and can't actually touch the goods, so the business owners can't know the purchase motivation of consumers and the risks they consider and it's more difficult to speculate their behavior intention [2]. Although online shopping provides consumers with convenience and multiple shopping modes, it also overcomes the limitations and obstacles of physical shopping. Because online shopping is conducted in virtual space, there are problems such as the security of payment mechanism, inability to personally experience physical goods and personal privacy. When facing the perceived risk caused by a purchase behavior, consumers may give up the purchase behavior, that is, the perceived risk will directly affect consumers' purchase intention [3]. This also implies that the perceived risk factors of online shopping have a negative impact on online shopping willingness. Therefore, only by understanding consumers' online shopping behavior and the key factors that affect consumers' online shopping can we formulate marketing strategies that meet consumers' needs. This also implies that the perceived risk factors of online shopping have a negative impact on online shopping behavior intention. Baker and Crompton (2000) thought that behavior can be predicted from intention. If the intention can be measured properly, the data will be very close to most of the actual behavior [4]. Therefore, consumer behavior intention is to reflect the possibility that a consumer will engage in a specific behavior. Many subsequent scholars regard repurchase intention, positive word-of-mouth and recommendation behavior as important indicators to measure consumer behavior intention [5]. Therefore, only by understanding consumers' online shopping behavior and the key factors that affect consumers' online shopping can we formulate marketing strategies that meet consumers' needs. According to the above background, this study has the following three purposes:

1. Analyze the consumer behavior characteristics of online sports goods.
2. Analyze personal background variable factors that influence consumers' purchase motivation, perceived risk, and behavioral intentions.
3. Analyze the prediction effect of consumer purchase motivation and perceived risk on behavioral intention.

2. LITERATURE REVIEW

2.1 Purchase Motivation

Many scholars believe that shopping is composed of a series of purchase behaviors to obtain the value of products or products. The basic purchase motivation of consumers is to find and purchase the products they need to meet the demand for the use of products or service functions [6]. Solomon et al. [7] believe that the generation of purchase motivation is due to the need of customers to meet the purchase demand, and the satisfaction of the corresponding shopping demand depends on whether the products or services purchased by customers can help customers achieve the shopping goals related to their value expectations [7]. Therefore, customer perceived value plays an important role in the formation of customer purchase motivation. Hur, Ko and Valacich [1] studied the shopping behavior of sports goods, that results showed that the motivation of online shopping includes five factors: convenience, information, diversion, socialization and economic motivation [1]. Ono, Nakamura, Okuno, and Sumikowa [8] divided consumption motivation into six categories, including: (1) value motivation: value motivation refers to finding discount or cheap goods when shopping, and consumers will be satisfied with finding discount goods.(2) Role motivation: when consumers are shopping for others, they play the role of social role and feel excited and inner joy.(3) Risk taking motivation: consumers expect to encounter new and interesting things in the
process of shopping and experience the joy of exploration, and experience the feeling of stimulation or risk taking. (4) Social motivation: enjoy shopping with friends and family, enjoy social activities with others when shopping, and shopping provides the opportunity to bargain with others. (5) Satisfaction motivation: use shopping to release pressure, reduce negative emotions, or treat yourself. (6) Thinking motivation: the motivation to follow trends or latest trends, to follow new products and innovations[8].

2.2 Perceived Risk

The concept of perceptual risk was first proposed by psychologists to represent a kind of psychological uncertainty. Bauer (1960) believes that consumers perceive some kind of unpredictability uncertainty. In the face of uncertainty, the results of their actions may be unpleasant because they can't meet their needs, which produces the so-called perceived risk [9]. Dowling (1986) put forward that "when consumers combine the consumption environment and consumer behavior, they will have an influence on consumer decision makers, which can be called perceived risk"[10]. As for Kim, Ferrin, and Rao [11], Internet perceived risk is defined as "consumers' Thoughts on the potential uncertain negative results of Internet transactions"[11]. Sandra and Bo [12] studied online shopping consumer behavior, and analyzed that there are four main risk perceptions of consumers through online shopping [12]: financial risk: consumers are worried that online consumption will cause money loss or financial information outflow, of which the biggest factor is worried about the outflow of credit card data, which is also the security issue of online shopping discussed by many research institutes. Performance risk: consumers are worried that the products purchased on the Internet are not as expected or the service after purchase is not perfect. Privacy risk: consumers are worried that leaving personal information on shopping websites will be abused or resold. Time / convenience risk: consumers worry about wasting too much time in the Internet to search or order to receive goods. Hur, Ko, and Valacich (2007) studied the risk factors of online shopping, including security and privacy, delivery, product quality and customer service [1].

2.3 Behavioral Intention

Fishbein and Ajzen [12] pointed out that behavioral intention refers to the subjective mechanism for an individual to engage in a specific behavior. The stronger the intention of a person to maintain a long-term relationship with a specific behavior and brand, the higher the opportunity to represent the actual behavior [12]. Engel, Blackwell, and MIniard [13] believed that behavioral intention refers to specific activities or behavioral tendencies that consumers may take to products or enterprises after consumption [13]. Zeithaml, berry and Parasuraman [14] believe that behavioral intention can be regarded as an indicator of whether a company can successfully retain customers. The so-called behavioral intention can be divided into the behavioral intention of favorable and negative unfavorable. When customers have positive behavioral intentions to the company, they often praise the company, have preferences for the company, increase the purchase quantity of the company's products or services, or are willing to pay a higher price. These behavioral intentions make customers willing to stay in the company. On the contrary, if the customer has negative intention to the company, the response is often to reduce the number of purchases to the company, and finally the customer will choose to leave the company [14]. Behavioral intention includes asking customers about their willingness to buy products or services in the future, and actively recommending to others. It is very important for enterprises to grasp or predict the future behavior intention of consumers, and to establish long-term relationship with consumers. Therefore, behavioral intention refers to a person's tendency of subjective judgment to take action in the future, which can be used to predict people's behavior [15].

3. RESEARCH METHODOLOGY

3.1 Subject and Sampling

In this study, consumers who buy products online on the sports goods platform were investigated by convenient sampling. The way of testing is to ask the online business platform operators to assist the researchers to send the questionnaire to the platform shopping (sports goods) consumers and ask them to fill in it. From March 1 to April 30, 2020, 594 valid questionnaires were collected.

3.2 Questionnaire

The scale of this study consists of three parts. First of all, there are 21 items in the online sports goods purchase motivation scale, which mainly
understand the consumers' motivation to purchase sports goods online. The second part is the online shopping perceived risk scale, which consists of 17 questions. It mainly understands the risks consumers feel when they buy sports goods online. The third part is the behavioral intention scale, which consists of four questions. It mainly understands the intention of consumers to continue to buy sports goods in the future and the willingness to recommend them to others.

The three scales were measured by Likert's 5-point scale, and were given 1-5 scores respectively from "very agree", "agree", "common", "disagree" and "very disagree". Demographic variables in this study include gender and age. In addition, in the aspect of online shopping behavior, it includes: the types of sports goods most often purchased, the average amount of each consumption, and the experience of using the Internet to purchase sports goods.

3.3 Data Analysis Method
The effective questionnaires collected in this study were analyzed by SPSS for windows 22.0. The analysis steps included: 1. Construct the reliability and validity of this research scale by exploratory factor analysis and Cronbach’s reliability test. 2. To analyze the demographic variables to consumers and the consumption of online sports goods by frequency distribution. 3. T-test and univariate multivariate analysis were used to analyze the differences in purchase motivation, perceived risk and behavioral intention of consumers with different demographic variables.

3.4 Reliability and Validity Analysis of the Scale

3.4.1 Purchase motivation
After exploratory factor analysis, five factors were selected from the online sports goods purchase motivation scale. Each factor was named convenience (5 questions), diversity (5 questions), economy (4 questions), information (3 questions) and social (4 questions) according to the characteristics of the items. The cumulative variance of the scale is 68.37, which can explain 59.68% of consumers' motivation to buy sports goods on the Internet.

3.4.2 Perceived risk
After exploratory factor analysis, five factors were selected from the Internet perceived risk scale. Each factor was named "psychology" (4 questions), "finance" (5 questions), "privacy" (4 questions) and "time" (4 questions) according to the characteristics of the items. The cumulative variance of the scale was 68.37, which could explain 68.37% of consumers' motivation to purchase sports goods on the Internet.

3.4.3 Reliability analysis
In this study, Cronbach’s α coefficient was used as the criterion. The higher the value, the higher the consistency of the variables and the more stable the scale. Generally speaking, for a questionnaire with a good reliability coefficient, the reliability coefficient of the total scale is preferably above .80, and in the case of a subscale, the reliability coefficient is preferably above .70 [16]. The results of the analysis show that the value of "online sports goods purchase motivation" scale is .89, the value of "perceived risk" scale is .81, and the value of "behavioral intention" scale is .75. According to the above results, each scale in this study has good reliability.

4. RESULTS AND DISCUSSION

4.1 Respondents Profile
Among the 594 questionnaires collected, 299 females (50.3%) were highest than 295 males (49.7%). In terms of age, the highest is 20-24 years old, with 196 people (33.3%) in total, while 180 people (30.3%) are under 19 years old, and the lowest is over 40 years old, with 36 people (6.1%). In terms of daily average online hours, 310 people (52.2%) are under 2 hours (inclusive), and 44 people (7.4%) are over 7 hours at least. In terms of the most frequent types of sports goods, 278 people (46.8%) bought sports shoes, 188 people (31.6%) bought sports clothes, 52 people (8.8%) bought sports articles, 32 people (5.4%) bought sports fitness equipment and 44 people (7.4%) bought sports accessories. In terms of the average amount of consumption per time, the maximum amount is less than US $150 per time. In the aspect of using the Internet to buy sports goods, the consumers who have more than one year but less than three years’ experience are the most, 186 (31.8%), and the least, 42 (7.2%) who have more than seven years’ experience.

4.2 Difference Analysis
The results of Table 1 t test analysis show that there is no significant difference in the factors of
Table 1. Summary of t test results of different genders

<table>
<thead>
<tr>
<th>Factors</th>
<th>Gender</th>
<th>frequency</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase motivation</td>
<td>Male</td>
<td>295</td>
<td>81.9458</td>
<td>10.5780</td>
<td>.261</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>Female</td>
<td>299</td>
<td>81.7057</td>
<td>11.8140</td>
<td>.378</td>
</tr>
<tr>
<td>Behavioral intention</td>
<td>Male</td>
<td>295</td>
<td>15.7322</td>
<td>2.72918</td>
<td>1.44</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>Female</td>
<td>299</td>
<td>15.3946</td>
<td>2.95346</td>
<td>.1</td>
</tr>
</tbody>
</table>

*p<.05

Table 2. Summary of t ANOVA results of different age

<table>
<thead>
<tr>
<th>Factors</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig</th>
<th>Post hoc tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase motivation</td>
<td>2359.428</td>
<td>5</td>
<td>471.886</td>
<td>3.85*</td>
<td>.002</td>
<td>25&gt;29 years old</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>1118.881</td>
<td>4</td>
<td>223.776</td>
<td>2.62*</td>
<td>.024</td>
<td>40&gt;under 19 years old</td>
</tr>
<tr>
<td>Behavioral intention</td>
<td>45.191</td>
<td>4</td>
<td>9.038</td>
<td>1.12</td>
<td>.35</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

Table 3. Summary of regression analysis of purchase motivation on behavioral intention

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience</td>
<td>.197</td>
<td>.035</td>
<td>.250</td>
<td>5.670**</td>
<td>.000</td>
</tr>
<tr>
<td>Diversity</td>
<td>.156</td>
<td>.033</td>
<td>.205</td>
<td>4.758**</td>
<td>.000</td>
</tr>
<tr>
<td>Economy</td>
<td>.106</td>
<td>.041</td>
<td>.105</td>
<td>2.591*</td>
<td>.010</td>
</tr>
<tr>
<td>Information</td>
<td>-.071</td>
<td>.055</td>
<td>-.052</td>
<td>-1.290</td>
<td>.197</td>
</tr>
<tr>
<td>Social</td>
<td>.323</td>
<td>.041</td>
<td>.296</td>
<td>7.973**</td>
<td>.000</td>
</tr>
</tbody>
</table>

R =.63  R²=.397  adjusted R²=.392  F=77.51**  
*p<.05,  **p<.01

Table 4. Summary of regression analysis of perceived risk on behavioral intention

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>Beta</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology</td>
<td>-.006</td>
<td>.029</td>
<td>-.008</td>
<td>-.193</td>
<td>.847</td>
</tr>
<tr>
<td>Finance</td>
<td>.218</td>
<td>.031</td>
<td>.296</td>
<td>7.022</td>
<td>.000</td>
</tr>
<tr>
<td>Time</td>
<td>-.001</td>
<td>.035</td>
<td>-.002</td>
<td>-.042</td>
<td>.967</td>
</tr>
<tr>
<td>Privacy</td>
<td>.211</td>
<td>.034</td>
<td>.248</td>
<td>6.152</td>
<td>.000</td>
</tr>
</tbody>
</table>

R =.44  R²=.194  adjusted R²=.188  F=35.40**  
*p<.05,  **p<.01

"purchase motivation" (t =.26, p >.05), "perceived risk" (t = .38, p >.05) and "behavioral intention" (t = 1.44, p >.05).

The results of single factor multivariate analysis of variance in Table 2 show that there are significant differences in the factors of "purchase motivation" (F = 3.85, p <.05) and "perceived risk" (F = 2.62, p <.05) among consumers of different ages. After the comparison, it is found that consumers of 25-29 years old are significantly higher than those of under 19 years old. In terms of perceived risk, consumers over 40 years old are significantly higher than those under 19 years old.

4.3 Regression Analysis

According to the results of Table 3, this study takes 5 factors of purchase motivation of online sports goods as the prediction variable, and "behavioral intention" factor as the criterion variable. The regression analysis results of forced entry method show that "convenience" (t = 5.68, p <.01), "diversity" (t = 4.76, p <.01), "economy" (t = 2.59, p <.05), and "social"
(t = 7.97, p < .01), $R^2$ = .397, which can predict 39% of consumers’ intention to purchase online sports goods.

From the results of Table 3, we can see that in this study, four factors of perceived risk are used as predictive variables, and the dimension of behavioral intention is used as the criterion variable. The results of regression analysis by forced entry method show that the risks of finance (t = 7.02, p < .01) and privacy (t = 6.15), $R^2$ = .194, the behavioral intention to predict the perceived risk of online sports goods purchase reached 19%.

5. CONCLUSION AND SUGGESTION

5.2 Conclusion

First of all, from the perspective of online consumers who buy sports goods, we can find that the number of women is almost the same as that of men, and the age is concentrated under 24 years old, and the average daily online hours is 2 hours, which is consistent with the findings of previous studies [16]. In terms of the most frequent types of sports goods, 278 people mostly buy sports shoes, which is consistent with the mainstream of sports goods consumption. Because the majority of young people buy sports shoes to engage in sports, and a few of them are used with clothing. In addition, it is also found that most of the experience of using the Internet to buy sports goods is less than 3 years, in fact, the main reason is that most of the young people have no income, usually rely on the family to support the economic source, plus less shopping experience, and relatively less online shopping experience.

This study further tested the differences, and found that there were no significant differences in the purchase motivation, perceived risk and behavioral intention factors between different genders of consumers. The researchers thought that the sample of this study should be generated by the majority of young people. However, there are different results in different ages. In terms of purchase motivation, consumers aged 25-29 are significantly higher than those under 19. The main reason is that 25-29-year-old consumers have begun to work and have a source of income. Compared with those under 19-year-old consumers, most of them are students and the source of income comes from their families. Therefore, the purchase motivation of 25-29-year-old consumers is higher than that of under 19-year-old consumers. In terms of perceived risk, consumers over 40 years old are significantly higher than those under 19 years old. Obviously, consumers over 40 years old are relatively higher than consumers under 19 years old due to their high consumption experience. According to relevant research, consumers of Generation Y, in terms of sportswear purchase behavior, and price awareness will ease the relationship between their clothing interest and purchase intention [17]. Therefore, the researchers also believe that with the increase of age, the price of sport goods will also affect the purchase intention of consumers. Comparing the results of this study with the related studies, it is found that there is no difference in the use of electronic consumption (credit card, electronic wallet, ATM, etc.) between generation Y and generation X [18]. From the above conclusion, we can also find that the consumption behavior of different products and different regions will be significantly different.

Then in the regression analysis, the results show that consumers think that online shopping has convenience, diversity, economy, and sociality, which can predict consumers’ intention to purchase online sports goods. Convenience motivation means that consumers can buy the products they want to buy in a convenient way [1]. The above results support that convenience motivation is one of the important factors affecting online shopping willingness [1,19]. Online shopping provides online consumers with a temporary distance from the things they feel bored or unwilling to face in their daily life [19]. The online shopping behavior based on this idea is based on the motivation of diversity, which is also supported in this study. Due to social motivation, it means that consumers want to share their experience or knowledge with the same interests and hobbies through the Internet to maintain interpersonal relationships [20]. Looking for lower-priced products on the Internet is one of the important motivations for consumers to conduct online shopping. This study also found that economic motivation has a predictive effect on behavioral intentions, and supporting economy is one of the main motivations for online shopping [18,21].

The results of this study are similar to those of previous studies, which verify that social media has a direct impact on how people communicate, exchange information, maintain personal data and establish relationships with others [22].
Then, in terms of the relationship between perceived risk and behavioral intention, this study found that consumers’ perceived financial risk had a predictive effect on their behavioral intention to purchase sports goods on the Internet. Support Sandra and Bo (2003) research points out that consumers worry about the loss of money or the outflow of financial information caused by online consumption, among which the biggest factor is the outflow of credit card data, which is also a security issue of online shopping discussed by many research institutes [23]. In addition, consumers pay more attention to the safety and privacy of online shopping than the convenience of online shopping [24], which also makes the safety and privacy risk factors one of the main reasons why consumers look back on online shopping [25]. This study found that consumers perceived the risk of privacy, which had a predictive effect on their intention to buy sports goods on the Internet. Supporting privacy risk factor is one of the main factors that affect consumers’ consideration of shopping. Because there are risks in buying products on the Internet, people usually discuss brand products and services with friends and acquaintances on the Internet platform or social media. From the results of this study, we can confirm that: quality, reputation, practicability and adoption of information, information demand and attitude towards information are the key factors of eWOM in social media that affect people’s purchase intention [26,27].

According to the above discussion, this study has the following conclusions: 1. The majority of online consumers of sports goods are under 24 years old, the number of men and women are equal, mainly buying sports shoes. 2. The average online time of consumers is 2 hours per day, and the online shopping experience is generally less than 3 years, and the consumption amount is the most under US $150 per time. 3. Different genders do not affect consumers’ purchase motivation, perceived risk and behavior intention, but different ages do. Consumers aged 25-29 have a higher purchase motivation, while consumers aged 40 and over have a higher perceived risk of online shopping. 4. Consumers’ intention to purchase sports goods on the Internet is obviously affected by the convenience of online shopping, product diversity, price economy, and social interaction with other consumers. 5. Consumers’ intention to purchase sports goods online is obviously affected by the risk of financial loss of online shopping and personal privacy leakage.

5.3 Suggestion

(1) The main consumers who use the Internet to buy sports goods are 20-24 years old and under 19 years old. It is inferred that this age group often uses the Internet. It is suggested that this age group can be targeted. Classification of age groups (Generation Y and Z) with reference to relevant literature [22,23], for generation Y who are 26-38 years old and have more spending power, you can use more content and creative materials that show creativity and improve resonance. For generation Z who are under 25 years old, the short video and audio supported by the celebrity is your marketing the best choice.

(2) The motivation of consumers to use the Internet to buy sports goods mainly lies in the convenience, economy, diversity and sociality brought by the Internet.

According to the research results of online shopping, it is pointed out that including semantic web elements in product description is the function of online website to provide better services for its customers [28]. Therefore, it is suggested that the operators can build a platform for various product introductions to make it easier for online consumers to obtain product information and purchase goods more quickly when they conduct sports consumption.

(3) Consumers who buy sports goods online are mainly worried about the risks in finance and privacy. Therefore, it is suggested that the operators of online business platform should establish a mechanism to protect consumers’ privacy, and provide more complete product information introduction, to minimize the risks of online shopping, and to improve consumers’ level of security for goods and businesses.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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